occurs through the back, which is normally exposed to the sun during surface swimming or resting. This cannot occur at night, and sunning therefore occurs in the early hours of the morning to compensate for overnight heat loss. Boersma (*in* Stonehouse 1975, The biology of penguins, London, Macmillan Press, p. 108) reported Galapagos Penguins (*S. mendiculus*) at sea with dry backs and considered that they were sunning. The birds were not described as holding their feet or flippers above the water.

Although the paucity of the data is recognised, sunning of Jackass Penguins at sea has not been observed previously (Siegfried et al. 1975, Zool. afr. 10: 87) and the peculiar posture has not been described for other members of the order. For this reason the attention of workers in a position to make observations is drawn to the phenomenon.

This note is one in a series of papers dealing with the ecology and conservation of the Jackass Penguin. The research is supported financially by the National Geographic Society, the Witswatersrand Bird Club, the Oppenheimer Memorial Trust, and the University of Cape Town.—J. COOPER, *Percy FitzPatrick Institute of African Ornithology, University of Cape Town, Rondebosch 7700, South Africa.* Accepted 1 Mar. 76.

Chemical residues in Arizona Harris' Hawk eggs.—The association of chlorinated hydrocarbons with reproductive failure of certain raptors has been documented (Hickey and Anderson 1968, Science 162: 271–273) and studied in a number of North American hawks, falcons, and eagles. This paper presents information on chemical residues and egg shell thicknesses found in five Harris' Hawk (*Parabuteo unicinctus superior*) eggs that I collected in Pima and Pinal Counties, Arizona in the Lower Sonoran Desert in 1975 from different nests, either as an egg that did not hatch among a brood of young (2 cases), or as an egg from a deserted clutch (3 cases).

The five eggs contained the following chemical residues as measured in ppm wet weight (mean is first, range second): DDE, 1.10, 0.34–2.20; dieldrin, 0.04, 0.02–0.06; hexachloro benzene, 0.01, 0 (four eggs had amounts less than 0.01 ppm); heptachlor epoxide, 0.06, 0.02–0.13 (one egg did not have this residue present); aroclor 1260, 0.26, 0.80–0.10 (one egg had quantity estimated). Mean thickness of egg shells with membrane was 0.392 mm (range = 0.350–0.440, shell thickness for one egg was average of five measurements), and without membrane 0.292 mm (range = 0.250–0.320).

Fifteen pre-DDT (prior to 1947) Harris' Hawk (*P. u. superior*) eggs (from 5 sets) in the egg collection of the Western Foundation of Vertebrate Zoology, had a mean shell thickness with membrane (as measured in the middle latitudes of the egg, opposite the blowhole, using their modified machine) of 0.406 mm (range = 0.333–0.473). One set may possibly have lacked shell membranes. Thirteen post-DDT eggs (from 4 sets) in the same collection had a mean shell thickness with membrane of 0.404 mm (range = 0.363–0.470). These values are very close to the mean of 0.392 mm in my study and it appears that egg shell thinning is probably not occurring in Harris' Hawk populations in southern Arizona.

Peakall (1970, Science 168: 592) includes the following as symptoms of raptor reproductive failures attributable to pesticide contamination: (1) failure to lay eggs, (2) failure to relay after the loss of an initial clutch of eggs, (3) egg breakage, and (4) abnormally late breeding. I have recorded only the third symptom in my years of Harris' Hawk study from 1969 to 1975, and this requires an explanation. Although broken eggs were occasionally found at nests, it was not clear whether the breakage was caused by pesticide contamination, careless adult hawks incubating, or predation. Judging from the low chemical residues in the eggs, I suspect that the latter two explanations are the most probable.

In my study all chemical residues occurred in low levels. Compared to the high amounts of DDE and dieldrin associated with nesting failures in other raptorial species, Harris' Hawks in saguaro-palo verde (*Carnegiea gigantea-Cercidium* sp.) flatland in southern Arizona appear presently stable as regards a possible population decline from chlorinated hydrocarbons. Egg contamination is probably coming from biocides consumed by resident prey populations. The fact that the prey species are almost exclusively resident and that the nests sampled averaged 16 km from agricultural areas (range = 5–26 km) suggests that some contaminants may filter into Harris' Hawk habitat by seasonal water drainages. Also Harris' Hawks that live short distances from agricultural areas may pick up contaminants when prey populations have declined in winter and the hawks move about more and into cultivated areas.

Snyder et al. (1973, Bioscience 23: 300) correlated increasing DDE residues in Cooper's Hawk (*Accipiter cooperii*) eggs with an increasing percentage of birds in the diet. Prey birds in this study included migratory species. Also, many raptorial species hardest hit by the pesticide syndrome, include hawks and falcons with a high percentage of birds in the diet. Mader (1975, Living Bird 14: 59) recorded the following for 91 observed prey deliveries at two Harris' Hawk nests and nest vicinity in southern Arizona: 52 mammals (57.1% indiv., 72.1% biomass), 32 birds (35.2% indiv., 26.2% biomass), and 7 reptiles (7.7%

indiv., 1.7% biomass). The foregoing suggests that the chlorinated hydrocarbons picked up by Harris' Hawks in my study, may be linked to a partial bird diet.

This investigation was supported in part by the Arizona-Sonora Desert Museum near Tucson, Arizona. I thank David H. Ellis and Robert E. White for arranging to have the eggs analyzed at the U. S. Fish and Wildlife Service Research Center at Denver, Colorado. I thank also Lloyd F. Kiff, of the Western Foundation of Vertebrate Zoology in California, for egg shell measurements of Harris' Hawks.—WILLIAM J. MADER, *13100 North LaCholla Blvd., Tucson, Arizona 85700.* Accepted 6 Apr. 76.

Winter observations of Brown Pelicans in Veracruz, Mexico.—From 2 November 1973 to 10 March 1974 I participated in ornithological research on the Gulf Coast of Mexico, 28 km north of Catemaco, Veracruz. The coastline in this portion of the Tuxtla Mountains consists largely of worn igneous cliffs, often forested to the level where salt spray reaches the vegetation. Beaches occur at scattered locations such as Jicacal and Balzapote. Local residents mentioned islands near the village of Montepio as possible pelican breeding sites.

Brown Pelican (*Pelecanus occidentalis*) activity was usually noted throughout the day. Work schedules at inland sites prevented consistent monitoring of daily patterns, which normally included a few birds feeding, resting, or passing by in either direction. On several occasions (see Table 1) I had the opportunity to watch evening movements as the pelicans flew northward along the coast within 275 to 450 m of shore. These movements, presumably to roost, usually began at 1630 and the last birds passed approximately 15 min. before darkness (1800). I classified each passing group as to percentage of immatures. Determination of an individual's age was based on whether it showed a white head (adult) or was totally brown (Palmer 1962, Handbook of North American Birds, New Haven, Yale Univ. Press).

TABLE 1
COMPOSITION OF BROWN PELICAN GROUPS OFF VERACRUZ

Date	Total	% immatures
15 November 1973	170	67.6
10 December 1973	83	84.0
14 December 1973[1]	439	72.0
15 December 1973	187	60.0

[1] This assemblage of pelicans spent the afternoon feeding just offshore.

Brown Pelican breeding status is poorly known along the eastern coast of Mexico (Schreiber and Risebrough 1972, Wilson Bull. 84: 119). The recent literature contains no reports of concentrations of this magnitude in Veracruz. The high proportion of immatures is intriguing but as it is unclear whether these birds belong to a local population, it is unsafe to conclude they represent a successful breeding colony in Veracruz. Actual breeding sites need to be found in order to ascertain the status of this species in eastern Mexico.

I thank Dwain W. Warner for help in preparing this note and Martin W. Sutfin for financial assistance while I was in the field.—ROBERT M. ZINK, *J. F. Bell Museum of Natural History, University of Minnesota, Minneapolis, Minnesota 55455.* Accepted 7 May 76.

An unusual interaction between Blue-winged and Golden-winged Warblers in Virginia.—Interactions of Blue-winged and Golden-winged Warblers (*Vermivora pinus* and *V. chrysoptera*) and their hybrids in zones of sympatry have continued to stimulate the interest of ornithologists in recent years. Attention has been focused on songs, territoriality, hybridization, and introgression. Most studies of the above problems have been conducted on well-known overlap zones in Maryland, Michigan, and New York while little attention has been given to other areas of overlap where hybridization may be expected (Short 1963).

Blue-winged and Golden-winged Warblers seldom show interspecific territoriality (Gill and Murray 1972, Ficken and Ficken 1968, Murray and Gill 1976), while among the "pure" types and their various hybrid forms mutually exclusive territories may be maintained between the most similar forms (as in the case of "Brewster's" types and Blue-winged Warblers; Ficken and Ficken 1968, Meyerriecks and Baird 1968).